

BIOLOGICAL ASSESSMENT PROPOSED LISTING OF JOHNSON SEA GRASS

SPECIES RANGE AND OCCURANCE. Johnson Sea Grass is reported to occur from Biscayne Bay through above Sebastian Inlet in the Indian River Lagoon. In 1994 the National Marine Fisheries Service (NMFS) proposed five areas for designation as critical habitat. In addition, the species may be found scattered throughout the stated range in water depths ranging to 10 feet in clearer waters (shallower in turbid waters) on sandy to silty but stable substrates. The species is sensitive to heavy sedimentation and while it appears to establish quickly, it does not compete well with other sea grass species.

DREDGING PROJECTS. There are a number of coastal navigation projects from Biscayne Bay to Sebastian Inlet. This includes the Intracoastal Waterway (IWW) and other navigation projects (see figures 1 and 2) including Miami Harbor (figure 3), Bakers Haulover Inlet (figure 4), Port Everglades (figure 5), New River (figure 6), Hillsboro Inlet (figure 7), Palm Beach Side Channel and Basin (figure 8), Palm Beach Harbor (figure 9), St. Lucie Inlet (figure 10), Fort Pierce Harbor (figure 11), Vero Beach Turning Basin (figure 12), and Sebastian Side Channel and Turning Basin (figure 13). Some of these projects are dredged regularly. See the attached table which summarizes the status and maintenance schedule for these projects. In addition, see attached report from Florida Inland Navigation District on planned activities. See also figure 14 which shows IWW in more detail. In addition, there are a number of regulatory permits for maintenance dredging along the waterways potentially occupied by Johnson Sea Grass.

PROJECT IMPACTS.

Reoccurring Maintenance Dredging. Portions of the IWW and several other projects are located on or adjacent to one of the five areas proposed as critical habitat for Johnson Sea Grass in 1994 (see enclosed figures 15 through 19). Reoccurring maintenance dredging of these projects could have a minor impact on Johnson Sea Grass. This impact could occur from minor side sloughing of a few feet and from placement of dredged pipe to reach a disposal site when using a pipeline dredge and an upland (or possibly beach) disposal site. Improved flushing, removal of fine sediments (which can cause turbidity and sedimentation when re-suspended), and minor periodic disturbance from dredging activities may benefit Johnson Sea Grass.

First Time Dredging. Additional impacts would result from first time dredging of the subject navigation projects for the purpose of deepening, widening, re-alignment, or initial dredging to authorized project depth (i.e., proposed dredging of the IWW in the vicinity of Palm Beach Harbor). Impacts would vary depending on the area dredged. First time dredging within or adjacent to one of the five areas proposed in 1994 as critical habitat would be likely to impact Johnson Sea Grass. Other areas (within the range of the species and in less than 10 feet of water) affected by dredging could also impact the species but probably to a lesser degree.

Dredging of IWW in Vicinity of Palm Beach Harbor to Project Depth. We are currently evaluating this dredging. Portions of the IWW have never been dredged to the authorized project depth. This project calls for dredging to a depth of 12 feet (previously dredge to a depth of 10 feet). The length of project to be dredged would be from 2 to 10 miles depending on economic analysis, availability of funds, and locally preferred option. The U.S. Fish and Wildlife Service (FWS) provided a Fish and Wildlife Coordination Act Report (CAR) dated December 22, 1997 (see copy appended to this document). The report indicates that the project would impact sea grass in the navigation channel including Johnson Sea Grass and that such impacts should be mitigated. The FWS was unable to provide a map showing the distribution of sea grasses. Therefore, the location and species of sea grass impacted will have to be determined prior to project construction to determine the extent of impact and need for mitigation. The dredging of the IWW to 12 feet would result in a deepening of about 2 feet over the previously dredged depth. Side sloughing of about 6 feet on either side would be expected. Based on the CAR, this project would impact about 2 acres of sea grass including scattered Johnson Sea Grass. Since the sea grasses occur mostly near Palm Beach Harbor (Lake Worth Inlet), the impact to sea grass would be about the same whether the length dredged starting from the harbor is 2 miles or 10 miles. The CAR recommends mitigation for these impacts including "acquisition and enhancement of a large privately owned submerged area near Little Munyon Island". Another mitigation option offered is "the creation of an artificial reef since hard substrate is scarce in the survey area".

Regulatory Permit Actions. A list of current maintenance dredging permits is attached along with a map showing the location. This includes private, commercial, and public facilities. Dock permits may also impact sea grasses but will be evaluated separately.

MITIGATION OF IMPACTS. Sea grasses of all types are considered important to the ecology of Florida's coastal waters. Sea grasses help stabilize sediments and the bottom, improve water quality, provide food for manatees, provide food and habitat for numerous fish and other organisms, and contribute heavily to the food chain and productivity of warm and shallow coastal waters. Given the importance of sea grasses, we try to design projects to avoid and minimize impacts to sea grasses. Unavoidable impacts are usually mitigated by creating or enhancing sea grass habitat to compensate. Impacts to more than a fraction of an acre of sea grass are often considered unacceptable unless there is a compelling reason for the impact and the impacts are substantially mitigated.

Attachments:

Figures 1 through 14, Project Maps

Figures 15 through 19, Proposed Critical Habitat

Coordination Act Report, Dredging IWW, Vicinity of Palm Beach Harbor

List of Regulatory Permits for Maintenance Dredging

TABLE 1: SUMMARY OF FEDERAL NAVIGATION PROJECTS AND DREDGING ACTIVITY, SEBASTIAN INLET TO MIAMI HARBOR

PROJECT	STATUS	MAINTENANCE SCHEDULE	OTHER DREDGING	POTENTIAL IMPACT AND MITIGATION
IWW vicinity Palm Beach Harbor	Area needs dredging, looking for disposal sites	3 to 5 year maintenance dredging interval	Dredge to authorized project depth 5 miles N & S of PB Harbor	Side sloughing and pipeline placement on potential habitat and proposed critical habitat
IWW vicinity Sebastian Inlet	Area needs dredging, looking for disposal sites	undetermined		Side sloughing and pipeline placement on potential habitat and proposed critical habitat
IWW vicinity Fort Pierce Harbor	Areas need dredging	undetermined		Side sloughing and pipeline placement on potential habitat and proposed critical habitat
IWW vicinity St. Lucie Inlet	Shoaling areas present	3 year maintenance dredging interval	Shoaling in OWW west of IWW	Side sloughing and pipeline placement on potential habitat and proposed critical habitat
IWW vicinity Jupiter Inlet	Area needs dredging, looking for disposal sites	3 to 5 year maintenance dredging interval		Side sloughing and pipeline placement on potential habitat and proposed critical habitat
IWW vicinity south Lake Worth Inlet	Area needs dredging, looking for disposal sites	3 to 5 year maintenance dredging interval		Side sloughing and pipeline placement on potential habitat
IWW vicinity Boca Raton Inlet	Area needs dredging, looking for disposal sites	3 to 5 year maintenance dredging interval		Side sloughing and pipeline placement on potential habitat
IWW vicinity Hillsboro Inlet	Looking for disposal site(s)			Side sloughing and pipeline placement on potential habitat
IWW vicinity Port Everglades Harbor	Deep draft channel	Low maintenance		Side sloughing and pipeline placement on potential habitat
IWW vicinity Bakers Haulover Inlet	Last dredged 1988	3 year maintenance dredging interval		Side sloughing and pipeline placement on potential habitat
IWW vicinity Miami Harbor		Low maintenance		Side sloughing and pipeline placement on potential habitat
Miami Harbor	Areas being deepened	3 year maintenance dredging interval once deepened	Areas being deepened	Side sloughing and pipeline placement on potential habitat

PROJECT	STATUS	MAINTENANCE SCHEDULE	OTHER DREDGING	POTENTIAL IMPACT AND MITIGATION
Bakers Haulover Inlet	Last dredged 1998	5 year maintenance dredging interval		Side sloughing and pipeline placement on potential habitat
Port Everglades	Currently shoaling	undetermined		Side sloughing and pipeline placement on potential habitat
New River		No plans at this time		
Hillsboro Inlet		Annual maintenance dredging by locals		Side sloughing and pipeline placement on potential habitat
Palm Beach Side Channel and Basin	Dredged 1998	2 year maintenance dredging interval		Side sloughing and pipeline placement on potential habitat
Palm Beach Harbor		Annual maintenance dredging		Side sloughing and pipeline placement on potential habitat and proposed critical habitat
St. Lucie Inlet *		3 year maintenance dredging interval	Martin County to dredge $\pm 400,000 \text{ yd}^3$ from interior inlet shoal for beach nourishment *	Side sloughing and pipeline placement on potential habitat and proposed critical habitat
Fort Pierce Harbor	Last dredged 1997	1 to 2 year maintenance dredging interval		Side sloughing and pipeline placement on potential habitat and proposed critical habitat
Vero Beach Turning Basin		No plans at this time		
Sebastian Side Channel and Turning Basin		No plans at this time		

* Plans to dredge 400,000 cubic yards from St. Lucie Inlet for beach renourishment from "St. Lucie Inlet Management Plan" revised January 19, 1995, by Applied Technology and Management, Inc. for Florida Department of Environmental Protection and Martin County Board of Commissioners.